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International Specialists in the Environment

MEMORANDUM

DATE: October 24, 1991

TO: John Osborn, FIT-RPO, USEPA, Region 10

THRU: Andrew Hafferty, FITOM, E & E, Seattle

FROM: Amy Houghton FIT-PM, E & E, Seattle AH.

SUBJ: RCRA Preliminary Assessment Report
Van Waters & Rogers Division of Univar
Portland, Oregon
ORD009227398

REF: TDD F10-9101-011
PAN F0R0050CAA

CC: Kevin Schanilec, RCRA-WAM, USEPA, Region 10
Deborah Robinson, HWD-SM, USEPA, Region 10
Michael Slater, HWD, USEPA, Region 10 (Memo Only)
Karl Morgenstern, AFITOM, E & E, Seattle

Transmitted herewith are two copies of the Van Waters & Rogers Division of Univar Resource Conservation and Recovery Act Preliminary Assessment Report. Coordinated review comments should be submitted as soon as possible for incorporation into the final document. If you have any questions, please feel free to contact me directly.

The Hazard Ranking System score and Site Inspection Recommendations are provided under separate memoranda.

AH:jeb

Enclosures

10/11/91
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RESOURCE CONSERVATION AND RECOVERY ACT PRELIMINARY ASSESSMENT REPORT FOR VAN WATERS & ROGERS DIVISION OF UNIVAR PORTLAND, OREGON ORD009227398

TDD F10-9101-011
PAN FOR0050CAA

Report Prepared by: ECOLOGY AND ENVIRONMENT, INC.

Date: October 1991

Submitted to: J.E. Osborn, Regional Project Officer
Technical Support Branch
U.S. Environmental Protection Agency
Region 10
Seattle, Washington

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
PRELIMINARY ASSESSMENT REPORT
VAN WATERS & ROGER DIVISION OF UNIVAR
PORTLAND, OREGON
ORD009227398
TDD F10-9101-011
PAN FOR0050CAA

Site Name/Address

Van Waters & Roger Division of Univar (VW&R)
3950 N.W. Yeon Avenue
Portland, Oregon 97210

RCRA Preliminary Assessment Site Inspection Participants

Amy Houghton, Field Investigator, E & E, Seattle, 206/624-9537

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Date of Investigation

Site Reconnaissance: August 14, 1991

DISCLAIMER

This report has been prepared by Ecology and Environment, Inc. under EPA Contract 68-01-7347 and reviewed and approved for public release by the United States Environmental Protection Agency (EPA). Mention of commercial products does not constitute endorsement by the United States Government. Editing and technical content of this report are the responsibility of Ecology and Environment, Inc., Seattle, Washington, and do not necessarily reflect the views or policies of EPA.

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ABSTRACT

Pursuant to United States Environmental Protection Agency Contract Number 68-01-7347 and Technical Directive Document Number F10-9101-011, a file review and Resource Conservation and Recovery Act (RCRA) Preliminary Assessment of the Van Waters & Rogers Division of Univar facility located in Portland, Oregon, was conducted on August 14, 1991.

Van Water and Rogers Division of Univar is a chemical distributor that stores, packages, and transports bulk chemicals. This active facility has been in operation since 1947. From 1974 to 1987, the company recycled spent chlorinated solvents in a distillation facility.

Many spills have occurred on-site during the plant's operation. On-site soils and groundwater beneath the site are potentially contaminated due to these spills. The facility currently is undergoing a RCRA Facility Investigation to further characterize on-site contamination to soils and groundwater, and to identify potential future remedial options.

1.0 INTRODUCTION

Pursuant to United States Environmental Protection Agency (EPA) Contract No. 68-01-7347 and Technical Directive Document (TDD) No. F10-9101-011, Ecology and Environment, Inc. (E & E) has been tasked to support EPA enforcement of the Resource Conservation and Recovery Act (RCRA) by conducting a RCRA Preliminary Assessment (RPA) of the VW&R site located in Portland, Oregon. This process does not include extensive or complete site characterization, contaminant fate determination, or quantitative risk assessment.

Van Waters & Rogers, Division of Univar (VW&R) facility lies on the northwestern border of Portland, Oregon, immediately southwest of the Willamette River (Figure 1). The site occupies approximately 12 acres and consists of a warehouse, administrative offices, railroad spur, loading docks, and aboveground storage tanks (Figure 2). From 1947 to present, VW&R has operated as a chemical distributor. In 1973, the company expanded its operations by implementing a chlorinated solvent recycling facility. This recycling process continued until 1987 (EPA 1991a).

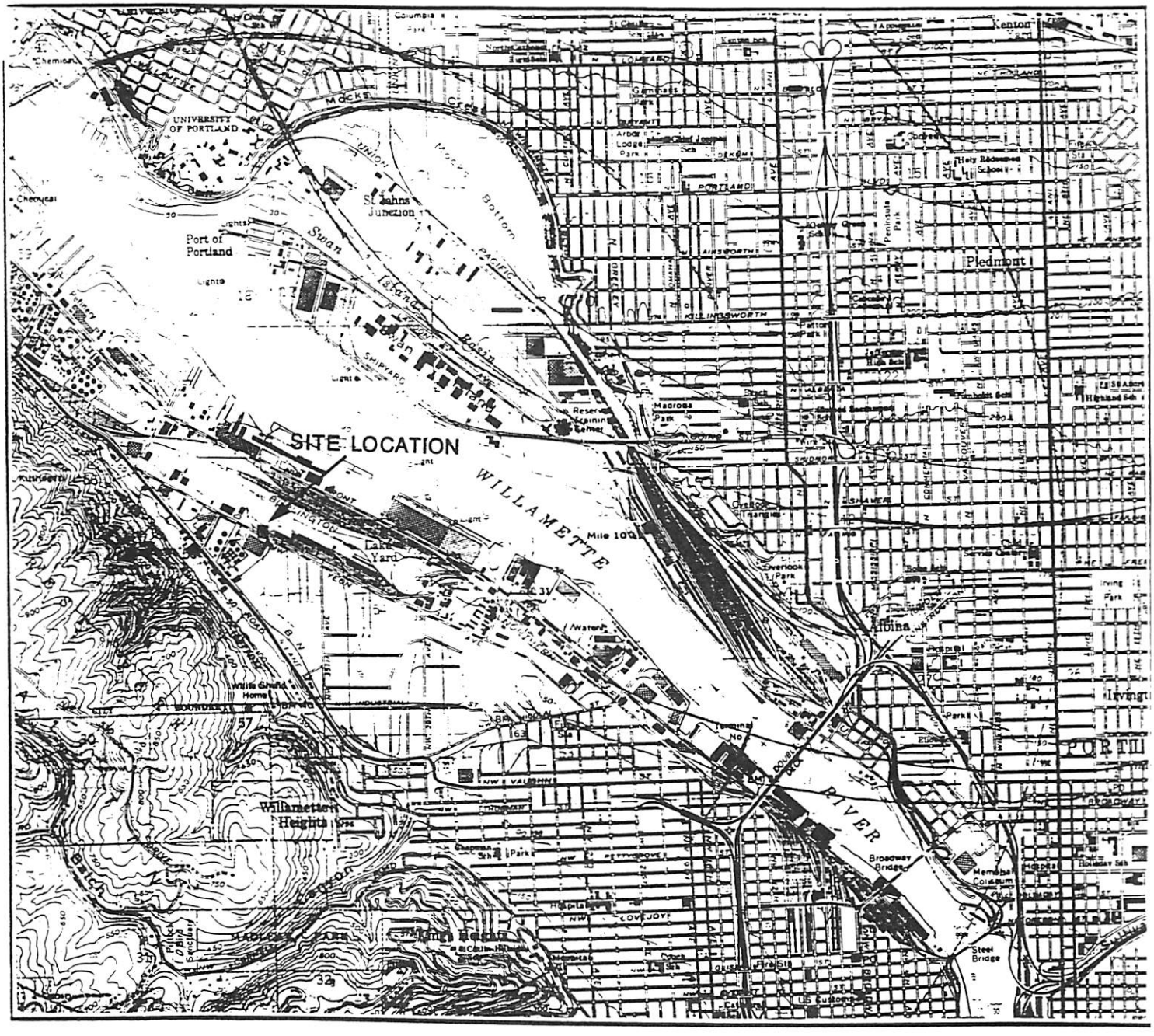
This document presents a summary of the objectives, activities, and results of the VW&R RPA. Included are descriptions of site and background information (Section 2.0), a description of the environment and environmental receptors surrounding the site (Section 3.0), and a discussion of individual solid waste management units (SWMUs), other areas of concern (AOCs) (Section 4.0) and inspection conclusions (Section 5.0).

1.1 Objectives and Scope of the RCRA Preliminary Assessment

The Hazardous and Solid Waste Amendments of 1984 (HSWA), specifically, Sections 3004(u), 3004(v), and 3008(h), establish authority in the RCRA program to address releases of hazardous waste or hazardous constituents from SWMUs. Releases to all media (air, soil, surface water, and groundwater) from all waste units are within the jurisdiction of the RCRA program, and when defined, require corrective action. This program applies to operating, closed or closing RCRA facilities. An RPA is a mechanism which the EPA utilizes to implement the corrective action authorities of HSWA.

An RPA is essentially a three-step process consisting of a preliminary review (PR), a visual site inspection (VSI), and a sampling visit (SV). The objective of this RPA was to complete the PR and VSI steps of the process and included the following:

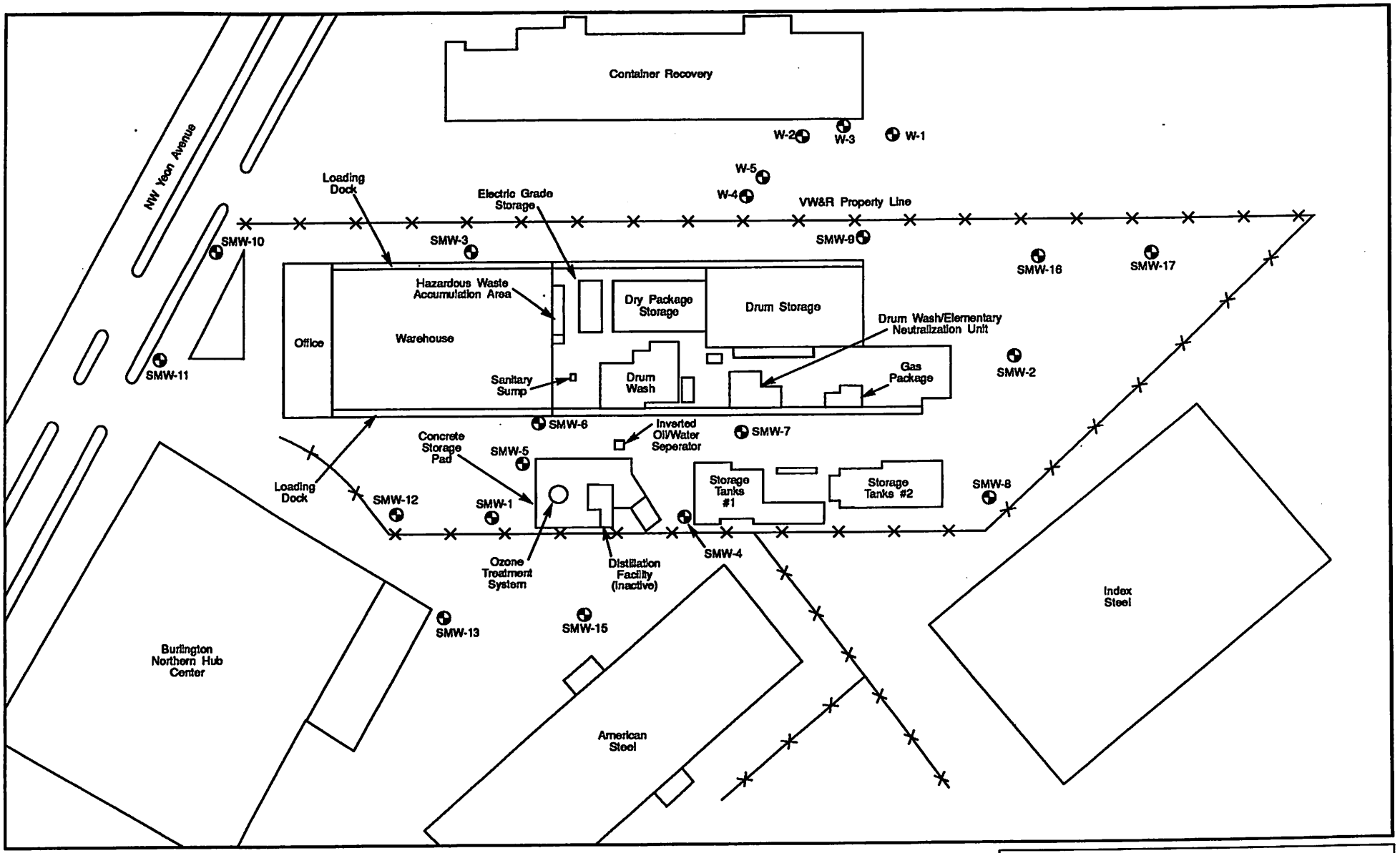
- Gathering information on releases at the RCRA facility, focusing on the facility's waste management practices and SWMUs;



ecology & environment, inc.	
Job: F10-9101-011	Site: OR 0050
Drawn by: A.H.	Date: May 5, 1991

FIGURE 1

Van Waters & Rogers
Division of Univar
Site location map
Portland, Oregon



SOURCE REFERENCE:

Harding Lawson Associates
Novato Cal.

LEGEND

Fence

Monitoring Well

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ecology and environment, inc.	
Job: FT1310\F10-9101-011	Pan: FOR0050CAA
Drawn by: AES	Date: Sept. 28, 1991

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FIGURE 2
SITE MAP

VAN WATERS &
ROGERS DIV. OF UNIVAR
Portland, Oregon

- o Evaluating SWMUs and other areas of concern for past and potential releases of hazardous waste or constituents to the environment;

- o Determining a need for further actions and/or interim measures, including a SV, to further characterize the facility; and

- o Screening from further investigations those SWMUs which do not pose a threat to human health or the environment.

2.0 FACILITY DESCRIPTION

2.1 Location and Description

The VW&R facility is located in section 20, Township 1 North and Range 1 East in Washington County, Oregon. The site's approximate geographic coordinates are 45°33'10.0" North latitude, 122°43'.30" West longitude. The site's address is 3950 N.W. Yeon Avenue, Portland Oregon. The facility is situated on a filled lowlands known as the Guild Lake Area. VW&R's site lies approximately 0.5 miles south of the Willamette River and 0.25 miles north of the Tualatin Mountains (Figure 1) (EPA 1991a). Prior to VW&R purchase of the land, the property was utilized for a housing development. Several manufacturing companies surround the VW&R property, to the east lies Container Recovery, a recycling company, to the northwest Burlington Northern Hub Center, and to the southwest lies Index Steel (E & E 1991). The VW&R property and adjacent land are situated in a heavily industrialized zone (EPA 1991a). Approximately 33 people presently are employed at the Portland VW&R site, 12 people are truck drivers and the rest work in the warehouse and main office (E & E 1991).

2.2 Plant Processes

VW&R is a chemical distributor packaging, storing and transporting large quantities of bulk chemicals. These industrial chemicals are brought to the site by way of rail car or truck. Approximately 250,000 pounds of product are received daily. Once received the chemicals are unloaded to the tank farm for storage and then transferred into 55-gallon drums or gas cylinders for distribution. The transferring of chemicals around the site produces the largest quantity of rinsate wastes (E & E 1991).

From 1973 to 1987, VW&R operated a distillation facility to recycle spent chlorinated solvents. The only wastes generated during this process were still bottoms (i.e., the leftover residue found on the bottom of the stills) (E & E 1991).

VW&R used 55-gallon drums to contain spent solvents before recycling and the empty drums returned to VW&R by their customers were cleansed on-site in a drum wash/ elementary neutralization unit. The layout of VW&R's facility including process areas, storage areas and monitoring well locations are illustrated in Figure 2 (EPA 1991b).

2.2.1 Process #1 - Chemical Transferring Activities

Chemical transferring on-site from the rail cars to the tank farm or from the tank farm to the drum fill areas is accomplished through the use of pumps and hoses. Each tank has a dedicated line, but each line does not have a dedicated pump and hose. Therefore hoses and pumps must be purged prior to transferring the virgin product in and out of the tank farm. The majority of VW&R hazardous waste (in the form of mixed solvents) is generated from rinsing hose lines. These rinsates are collected at several satellite accumulation areas located near the point of generation. Once the satellite container is full it is transferred to the hazardous waste storage area and then disposed of off-site within 90 days by Chemcare (E & E 1991).

2.2.2 Process #2 - Corrosive Drum Wash

The corrosive drum wash operation involves cleaning acid and caustic drums returned from VW&R customers. Before washing activities begin, the chemical content of each drum is analyzed by VW&R's laboratory technicians to determine if the substance can be reused as product. If the substance is categorized as a waste then it is discarded to a drum at a satellite accumulation area. When filled, these satellite drums are transported to the hazardous waste storage area and disposed of off-site by Chemcare within 90 days. All drum wash activities occur along the western loading dock (EPA 1991b).

Once drained of the chemical content, the returnable drums are transferred to the elementary neutralization facility. This unit flushes the drums with water to remove corrosive residue. The rinsate falls into the first of two neutralizing tanks and is treated with caustic soda. Once a batch has been neutralized it is introduced into the second neutralizing tank. Here the effluent is cooled and treated further until city discharge requirements are met. The effluent is then discharged to the sanitary sewer system under the Municipal Pretreatment program waste discharge permit No. 400-025 issued in 1988 by the City of Portland Bureau of Sanitation Engineering (E & E 1991).

2.2.3 Process #3 - Spent Chlorinated Solvent Recycling Activities

VW&R recycled spent chlorinated solvents for 14 years. The four products handled were perchloroethylene (PCE), trichloroethylene (TCE), methylene chloride and 1,1,1-trichloroethane (TCA) (EPA, 1991b). During this time, all recycling processes were accomplished at the distillation facility and concrete spent solvent storage pad. The distillation facility consisted of a holding tank and two stills inside the building and four above ground storage tanks adjacent to the building. Closure plans for the concrete storage pad and distillation facility are pending on the completion of the Interim Corrective Measures section of the RCRA Facility Investigation (RFI) which is currently underway (E & E 1991).

Feedstocks originated from a variety of VW&R's customers (off site generators). The spent chlorinated solvents were received in 55-gallon steel drums and stored on the concrete storage pad adjacent to the distillation facility. From the storage pad the solvents were pumped to a 800 gallon aboveground holding tank. The solvents then continued to the two crude stills where they were cooked and cleansed of heavy greases and large particulates. Once purified, the recycled solvents were bulk stored in aboveground steel tanks adjacent to the distillation facility and then sold as reclaimed products. Stillbottoms generated during the recycling process were gravity fed into a 55-gallon drum and shipped to Chemical Security Systems Inc. for disposal. Output from the distillation facility ranged from 300 to 1000 gallons of recycled product per day (E & E 1991).

2.3 Identification of Potential SWMUs and AOCs

The location of each SWMU is illustrated in Figure 3.

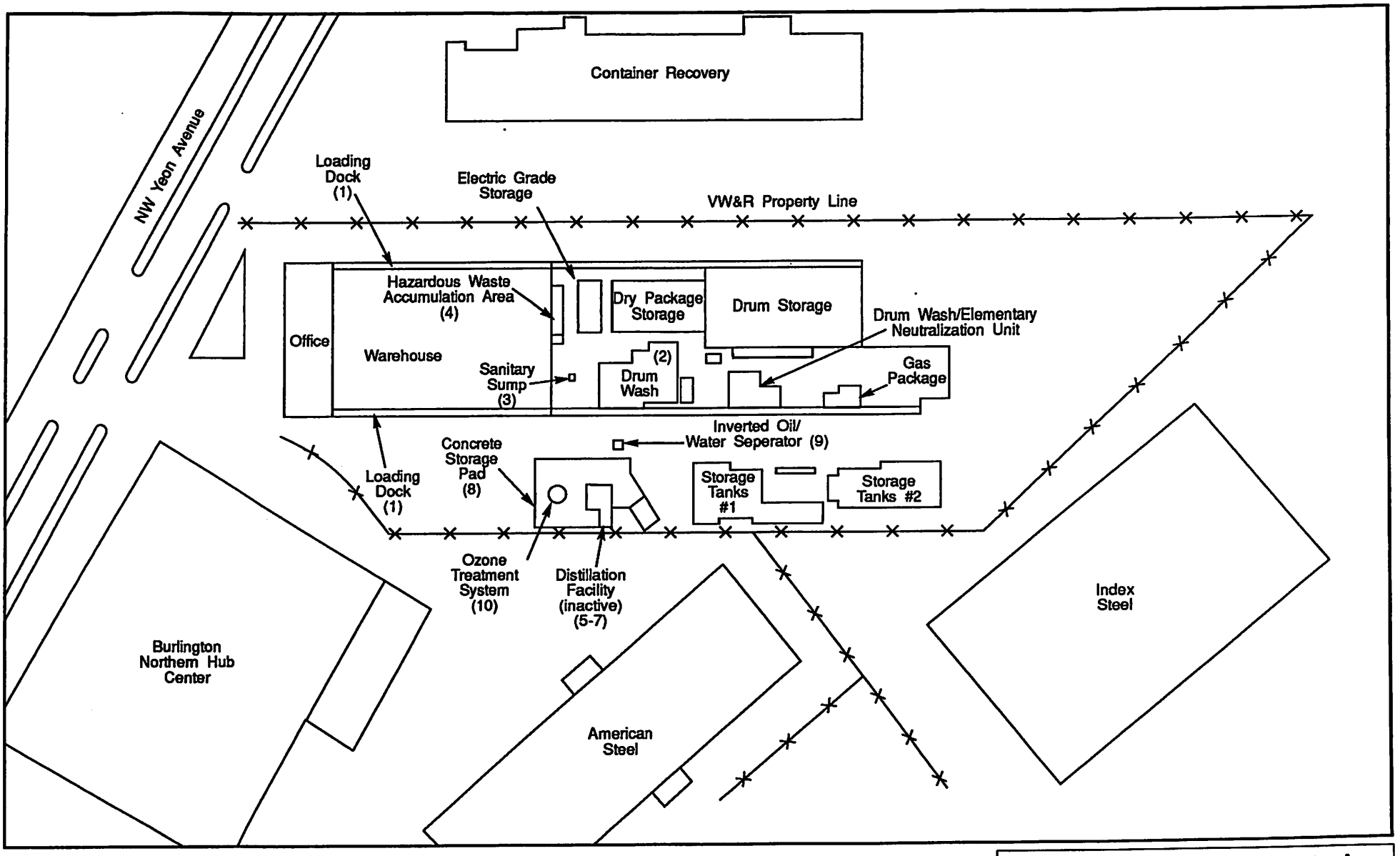
SWMUs	Location
1	Loading Dock
2	Elementary Neutralization Unit
3	Sanitary Sump
4	Hazardous Waste Accumulation Area
5-7	Distillation Facility
8	Concrete Spent Solvent Storage Area
9	Inverted Oil/Water Separator
10	Ozone Treatment Systems

AOCs	Location
1	Yard
2	Storage Tank Area #1
3	Storage Tank Area #2
4	Laboratory

2.4 Permit and Regulatory History

9/18/80 VW&R submitted the Part A permit application to the EPA as a treater and storer of hazardous waste. VW&R treated the waste by distillation. Prior to distillation practices, hazardous waste was stored on site in drums and tanks (EPA 1991b).

7/13/81 VW&R submitted an amended application to the EPA indicating that hazardous waste was not being stored in tanks prior to distillation (EPA 1991b).



SOURCE REFERENCE:

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LEGEND

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FIGURE 3
SWMU LOCATION MAP

VAN WATERS &
ROGERS DIV. OF UNIVAR
Portland, Oregon

6/4/81 Oregon Department of Environmental Quality (ODEQ) issued VW&R a Hazardous Waste Treatment-Collection Site License (HWTF-5). This license regulated VW&R's treatment of PCE, TCE, TCA and methylene chloride and the collection of toxic hazardous waste, corrosive hazardous waste and ignitable hazardous waste (EPA 1991b).

5/19/83 Observed ODEQ violation - VW&R had been signing off as the end point for hazardous waste shipments without the authorization to treat or dispose of the manifested hazardous waste. The amplitude of the violation was not specified in the EPA documents (EPA 1991b).

5/13/85 A RCRA site inspection was conducted. Specific violations recorded during the inspection were:

- o The aisles between the drums in the drum storage building were too narrow as defined by 40 CFR 265.35 (EPA 1991b),
- o The Contingency Plan and Waste Analysis Plan were not adequate by 40 CFR 265 Subpart D and 40 CFR 265.13 (EPA 1991b),
- o VW&R only inspected the drum storage area monthly instead of weekly as required by 40 CFR 265.174 (EPA 1991b).
- o The facility was storing more drums than the permitted amount (105) of "untreatable waste or treated waste residue" (EPA 1991b),
- o The facility failed to follow correct procedures on manifesting waste on certain drums of waste, as required in OAR 340-102, Subpart B (EPA 1991b), and
- o VW&R violated regulation 40 CFR 265.171 by not maintaining their drums. Several drums were recorded to be leaking during the inspection (EPA 1991b).

9/8/83 The DEQ documented the occurrence of a 515 gallon Trichloroethylene spill adjacent to the western loading dock. No cleanup certification has been documented (EPA 1991b).

7/26/85 The ODEQ sent a letter to VW&R requesting a Part B application permit (EPA 1991b).

9/14/85 A 2,476 pound spill of methylene chloride and a 1,032 pounds spill of toluene was recorded by the ODEQ to have occurred adjacent to the western loading dock. No documented remedial action took place after the spill (EPA 1991b).

9/23/85 ODEQ issued VW&R a Notice of Violation and Intent to Access Civil Penalty for an inadequate closure plan (EPA 1991b).

10/4/85 VW&R submitted to the EPA Region 10 a written inspection schedule plan and logs for the facility (EPA 1991b).

11/21/85 VW&R submitted a written Contingency Plan and Waste Analysis Plan in response to a Notice of Violation from the ODEQ enforcement section (EPA 1991b).

11/22/85 VW&R wrote a letter to the ODEQ requesting Part A of VW&R's permit be canceled due to closure plans scheduled for the distillation facility's concrete storage pad (EPA 1991b).

1/22/86 The ODEQ approved of VW&R's inspection schedule plan (EPA 1991b).

3/17/86 ODEQ and EPA met with VW&R representatives to discuss VW&R's voluntary compliance with DEQ's request for a groundwater investigation of the site (EPA 1991b).

4/21/86 A RCRA site inspection was conducted on-site. The following violations were recorded during the inspection (EPA 1991b):

- o The closure plan for the drum storage pad was not corrected, and
- o VW&R's manifesting system did not meet the requirements of 40 CFR 263.21(a)(1) (Class II violation).

7/86 EPA issued two Administrative Orders to VW&R requiring them to monitor, analyze and test on-site soil and groundwater (EPA 1991b).

6/12/87 Pursuant to the Administrative Orders issued by the EPA under sections 3008(a), 3013, and under 3008(a) of RCRA, VW&R hired Harding Lawson Associates to conduct a multi-phased facility investigation. Phase I was conducted from June to August to evaluate the hydrogeology and the extent of chemical contamination at the site, if any. Phase II was designed to provide

a more detailed hydrogeological and chemical characterization of the site. Phase II occurred from August through December. Phase I & II included chemical analysis from 64 surface soil samples, 15 shallow subsurface borings, five deep exploratory borings and six monitoring wells. The surface soil, subsurface soil, and the groundwater samples all contained elevated chemical concentrations, primarily of TCE, TCA, and tetrachloroethane (HLA 1989). Analytical result can be observed in Appendix C.

6/15/88 EPA approved of VW&R's soil and groundwater monitoring, analysis and test methods (EPA 1991b).

7/1/88 EPA and ODEQ approved of VW&R postponing the closure plans for the distillation facility and concrete storage pad until the proposed RFI was completed (EPA 1991b).

8/1/88 VW&R began conducting Phase III of the RFI. This Phase involved obtaining additional information on site hydrogeology, determining the vertical and horizontal distribution of chemical contamination, including an assessment of the potential for off-site migration of chemicals, and also gathering data in order to conduct a preliminary assessment of corrective measures. Seventeen additional groundwater wells, four soil gas monitoring wells, and one extraction well were installed during this phase. Sample results are presented in Appendix C (HLA 1989).

8/30/88 VW&R submitted Progress Report I to the EPA with the first round of groundwater and soil gas results. These results indicated the presence of TCE, PCE, TCA, dichloroethene (DCE), toluene, xylenes and methylene chloride. Sample results showed chemical concentrations exceeding Superfund screening concentration for the groundwater pathway. (Appendix A) (HLA 1989).

10/88-2/91 VW&R submitted 16 Progress Reports II through XVII to EPA, Region X. TCE, TCA, DCE, PCE, xylene, toluene and methylene chloride continued to be detected in the groundwater and soil gas samples. Concentration levels consistently exceed Superfund screening concentrations for the groundwater pathway (Appendix C) (HLA 1989).

4/17/90 VW&R submitted a Contingency Plan to the ODEQ, Portland, Oregon Police Department, Fire Department, and the Industrial Clinic. The content of the plan was not described in the EPA file review (EPA 1991b).

9/10/90 A RCRA site inspection was conducted. No violations were recorded by the EPA (EPA 1991b).

3.0 ENVIRONMENTAL SETTING

3.1 Surface Water Use

No natural surface water drainage exists in the Guilds Lake area. Small streams exiting the Tualatin Mountains south of the VW&R facility are apparently routed through culverts to the Willamette River. The closest culvert appears to run through the Texaco Facility about 1,000 feet west of VW&R (HLA 1989). Surface-water is collected on-site in storm drains which connect to a 42-inch storm sewer line located along the site's eastern border. The water continues through the sewer line to Yeon Avenue where it connects to the city sewer system (E & E 1991). The city sewer line eventually discharges into the Willamette River approximately 1 mile northeast of the site on 35th street (Lampi 1991).

The Willamatte River, located approximately .4 miles from the site, forks 4.5 miles downriver creating the Multnomah Channel. The confluence of the Multnomah Channel and the Willamette River with the Columbia River occurs approximately 18.5 miles downriver from the site (USGS 1984, 1977). The average annual stream flow for the Willamette and Columbia Rivers are approximately 33,000 cubic feet per second (cfs) and 184,179 cfs, respectively (E & E 1988).

Surface water located within 15 miles downriver of the site is used for commercial/industrial purposes, recreation, and fishing. An industrial surface water intake exists approximately 4.0 miles downriver. The intake supplies water that is used in a chemical reactor by West Coast Adhesives Company in Portland (E & E 1988).

The Willamette and Columbia Rivers are migratory corridors for several anadromous fish species. The most common migratory species in the Willamette and Columbia Rivers are the Chinook and Coho salmon, Steelhead, and American Shad. In 1989, an estimated 316,000 pound of Chinook Salmon were caught from the Willamette River and Multnomah Channel and an estimated 859,658 pounds were caught from the Columbia River (ODFW 1989). Approximately 30 miles of wetland frontage exist along the Multnomah Channel, Willamette River, and Columbia River within 15 miles downstream from the site. (USDI 1989a, 1989b, 1989c).

3.2 Regional and Local Geology/Hydrology

The VW&R lies on a nearly flat floodplain approximately 1 mile wide, bounded to the south and southwest by the Tualatin Mountains and

to the north by the Willamette River (Figure 1). The elevation of the facility is roughly 35 feet above mean sea level (MSL), or about 25 to 30 feet above the normal Willamette River water level (VW&R 1990).

The Tualatin Mountains are composed of the thick lava flow deposits of regional extent known as the Columbia River Basalts. These Tertiary Age basalts are broadly folded from regional warping and dip 7 to 15 degrees to the northeast. These hard, resistant beds are overlain by a series of sedimentary rocks, alluvial floodplain deposits, lake bed deposits, and artificial fill materials (VW&R 1990).

The industrialized area in which the facility lies is commonly known as the Guild Lake area. Before 1910, Guild Lake was a shallow recreational lake, probably formed by a flooded back swamp. Between 1910 and 1930, the lake and surrounding area were filled with sediment dredged from the Willamette River and hydroblasted from the Tualatin Mountains. The land surface is predominantly silt and fine sand (VW&R 1990).

The VW&R facility is underlain by a shallow unconfined aquifer approximately 25 to 30 feet thick, an aquitard 16 to 28 feet thick, and a deep aquifer zone approximately 14 to 17 feet thick (VW&R 1990).

The shallow aquifer is composed predominantly of well-sorted fine-to medium-grained sand with lenses of laterally discontinuous beds of silty and clayey sediment. The sand thickness ranges from 3 to 30 feet depending on the location under the facility. Saturated sediments are generally encountered approximately 10 feet below ground level at the facility (VW&R 1990).

Below the uppermost aquifer zone, the top of aquitard layer consisting of clay and clayey silts occurs between 26 to 33 feet below ground surface (bgs). These aquitard clays are composed primarily of dark gray and gray-brown clay and silty clay are believed to be fine-grained sediments deposited on the original lake bottom. The thickness of the clay is approximately 16 feet in the western portion of the site. The unit thickens to the north at 28 feet and becomes siltier (VW&R, 1990).

The deep aquifer zone consists primarily of laterally discontinuous beds of clayey to sandy silt and silty sand. The top of the deep aquifer occurs between approximately 41 and 58 bgs and its thickness ranges from 14 to 17 feet. The Troutdale Formation, occurring between 58 and 78 bgs, defines the bottom of the deep aquifer zone (VW&R 1990).

The general direction of the groundwater flow is towards the north-northwest. This flow appears consistent with the regional flow from recharge along the Tualatin Mountains toward the Willamette River. However, the groundwater flow direction varies locally across the site. Based on the water-level elevations measured by Harding Lawson Associates on May 14, 1990 there is a potential flow towards the

southeast and towards the west. The horizontal hydraulic gradients in the shallow aquifer zone ranges from 0.008 ft/ft (in the southern and northern areas) to 0.001 ft/ft (in the west central portion of the site) (VW&R 1990).

Approximately 190 people live within 4 miles of the site and use groundwater for domestic purposes (Table 1). The closest drinking water well is located approximately 1 mile from the site (USGS 1984, 1977).

TABLE 1

POPULATION FOR GROUNDWATER USE WITHIN A 4-MILE RADIUS

Radius (miles)	Number of Wells	Population
0-1	0	0
1-2	25	59
2-3	15	36
3-4	40	95

3.3 Climate/Demographics

The climate in the Portland area is tempered by prevailing winds from the east in the winter and from the northwest in the summer. The average temperature ranges from a low of 35°F in January to 60°F from June through September. The average annual precipitation recorded at the Portland International Airport is 37.39 inches. Net precipitation for this area is 2.5 to 7.5 inches per year (USDC 1979). Approximately 101,652 people reside within 4 miles of the site. The population breakdown per mile radius of the site is presented in Table 2. The nearest residence is located .025 miles from the site (USGS 1984, 1977).

Table 2

THE POPULATION WITHIN A 4-MILE OF THE SITE

Radius (miles)	Population
On-site (workers)	33
0 - 1/4	555
1/4 - 1/2	838
1/2 - 1	2,864
1 - 2	8,427
2 - 3	38,170
3 - 4	50,765

4.0 DESCRIPTION OF SWMUs AND AOCs

4.1 SWMU 1: Loading Docks

4.1.1 Information Summary:

Unit Description: The loading docks are elevated concrete areas located along the eastern and western side of the facility. They extended from the main office structure, approximately 800 feet, to the end of the railroad spur. Several different activities take place along the length of these docks. The portion adjacent to the main warehouse (to the west) is used for receiving all packaged materials and the eastern side is used to ship all materials. The next 50-75 feet of the loading dock on the western side (adjacent to the neutralization units) is used to collect and sort empty product drums. The remainder of the western dock (adjacent to the tank farm and gas yard operations) is used to transfer and fill drums. (E & E 1991).

Dates of Operation: This area has existed since the facility was built in 1947 and continues to be used today

Wastes Managed: No wastes are managed along the eastern loading dock. The wastes managed on the western loading dock are mainly solvents and corrosive materials

Release Control: The loading docks are constructed of concrete, but contain no release control systems.

History of Releases: On January 31, 1980, approximately 100 gallons of methylene chloride were spilled onto the western dock area when a transfer hose burst. During the August 1991 site investigation performed by E & E, VW&R reported that they did not know what remedial activities took place after the spill. Groundwater samples collected

adjacent to the western loading dock on August 8, 1991 indicated the presence of TCE, TCA, PCE, methylene chloride, and toluene at elevated concentrations (E & E 1991).

4.1.2 Conclusions

The loading docks have remained active since their construction in 1947. Past chemical releases from this SWMU have potentially contaminated underlying groundwater. The history of activities at this SWMU is unknown. Underlying groundwater is being monitored by Harding Lawson Associates for potential contamination.

4.2 SWMU 2: Elementary Neutralization Unit

4.2.1 Information Summary

Unit Description: The elementary neutralization unit is located on the raised western dock approximately 75 feet south of the main warehouse. The unit consists of two 1,200 gallon fiberglass lined, concrete vats with dimensions 4 feet wide x 12 feet long x 2 feet deep and 4 feet wide x 13 feet long x 3 feet 8-inches deep. The unit has been fitted with water spigots to rinse drums so that the rinsate gravity feeds into the neutralizing unit. An air line apparatus sits in the bottom of the unit to agitate and cool the collected rinsate. A steel walkable grate extends over the top of the unit. Prior to installation of this unit, another neutralizing unit existed in its' place. Following written requests, VW&R representatives failed to supply information on the earlier neutralizing unit (E & E 1991).

Dates of Operation: The installation of the first unit is unknown, but the present unit was installed in 1984 and is still used.

Waste Managed: Residue from empty acid and caustic drums returned by customers are neutralized in this unit.

Release Control: The neutralizing unit is embedded in the concrete loading dock. No leak detection system is known to exist for this unit.

History of Release: There is no history of leaks, spills or uncontrolled releases from the present unit. The release history for the original unit is unknown.

4.2.2 Conclusions

The existing elementary neutralizing unit was constructed in 1984 and is still active. Additional information on the original unit is necessary to characterize this SWMU.

4.3 SWMU 3: Sanitary Sump

4.3.1 Information Summary

Unit Description: This concrete sump is located approximately 15 feet north of the elementary neutralization unit and connects to the city storm sewer. The sump is used to collect drippings from drums placed in the area after treatment in the neutralization process (E & E 1991).

Dates of Operation: The dates of operation are unknown (E & E 1991).

Wastes Managed: Drippings from treated drums are managed at this unit. This rinsate contains dilute corrosive concentrations.

Release Control: None

History of Release: Contact of dilute corrosive rinsates caused deterioration of the concrete pad surrounding the sump and the concrete sanitary sewer pipe connected to the sump.

4.3.2 Conclusion

To fully characterize this SWMU, additional information is required on the dates of operation and the remedial action taken following the unit's deterioration.

4.4 SWMU 4: Hazardous Waste Accumulation Area

4.4.1 Information Summary

Unit Description: The hazardous waste accumulation area is located directly south of the main warehouse and functions as a temporary holding area for hazardous waste generated on-site. This waste is held 90 days or less while awaiting shipment by Chemcare to an off-site RCRA permitted facility. The holding area consists of a concrete pad measuring 11 feet wide x 29 feet long with a container capacity of 144, 55 gallon drums (E & E 1991).

Dates of Operation: The unit was implemented in 1986 and is still operational today.

Wastes Managed: VW&R's self generated wastes consist of solvent recovery sludge from the distillation facility (until late 1987), freon, trichloroethylene, methylene chloride, perchloroethylene, lap packs (old laboratory chemicals), flammable liquids, lacquer thinner, and some adhesives.

Release of Control: Two signs distinguish the boundary of the concrete based hazardous waste accumulation area. No release control systems (fence, berm or trench) surround this unit.

History of Release: According to VW&R's representatives, there have been no spills, leaks or uncontrolled releases from this unit during periods of operation.

4.4.2 Conclusion

This unit has been in operation for approximately 5 years. During this time, no chemical releases have been documented from this SWMU. Sample results also indicate that no soil contamination underlies this unit.

4.5 SWMUs 5, 6, and 7: Distillation Facility

4.5.1 Information Summary

Unit Description: SWMU's in this facility include:

- SWMU 5: Holding Tank
- SWMU 6: Crude Still-1
- SWMU 7: Crude Still-2

The distillation facility is located along the western property line of the VW&R site. The unit was designed to recycle spent chlorinated solvents. The spent solvents were poured into a 800 gallon holding tank. From here the solvents were pumped into the approximate 1,000 gallon crude Still-1 where heavy greases and large particulates were removed. The solvents then continued to crude Still-2 for further purification. Both stills are of similar size. The final recycled product was pumped from Still-2 and discharged to one of the four aboveground bulk steel storage tanks (E & E 1991).

Dates of Operation: The recycling facility operated from 1973 to 1987.

Waste Managed: The waste generated from the distillation facility was in the form of stillbottom sludge. Quantities of stillbottoms generated per year for 1983 and 1987 are listed below. The 1983 figures represent the largest waste quantity generated during the unit's last five years of operation, and the 1987 figures represent the smallest waste quantity generated.

Year	Drums(55-gallon)	Cubic Feet
1983	165	1,213
1987	43	316

Release Control: The stills and holding tank rest on a concrete pad and are covered by a metal siding roof. The concrete pad is 25 feet x 25 feet and the roof is 14.5 feet high. The concrete pad sits on top of another concrete pad which is sloped and directs any releases to a culvert that drains to a inverted oil/water separator.

History of Release: On September 8, 1983, 515 gallons of trichloroethylene was reported to have leaked from a broken site gauge onto the ground and into the storm sewer system. Sample results collected on August 8, 1991 from the monitoring wells surrounding the distillation facility indicate that elevated concentration of TCE, PCE, and TCA exist in the underlying groundwaters. Soil samples collected on August 4, 1987 adjacent to the facility also indicated soil contamination up to 10 feet bgs.

4.5.2 Conclusion

The distillation facility was in operation from 1974 to 1987. Closure plans for this unit are pending on the completion of the RFI which currently is in process. Monitoring well and soil sample results suggest that a chemical release from this unit may have potentially contaminated the underlying groundwater.

Additional information on the waste quantity of stillbottoms generated prior to 1983 is required to fully characterize this SWMU.

4.6 SWMU 8: Concrete Spent Solvent Storage Area

4.6.1 Information Summary

Unit Description: The spent solvent storage area consisted of a concrete pad which was located in the northern section of the recycling area. This hazardous waste area stored approximately one thousand, 55 gallon drums containing spent chlorinated solvents prior to treatment in the recycling process (E & E 1991). During the 1990 RCRA site inspection, several minor cracks were observed in the concrete pad (EPA 1991b).

Dates of Operation: The spent solvent storage area was utilized from 1974 to 1986.

Wastes Managed: Spent chlorinated solvents were stored in this unit.

Release Control: The entire area is sloped to divert potential releases to a culvert that drains to a inverted oil/water separator.

History of Release: In the December 1990, elevated concentrations of chlorinated chemicals were detected in soils adjacent to the storage pad area.

4.6.2 Conclusions

For approximately 13 years, the concrete storage area has been utilized to contain drummed spent chlorinated solvents. Sample results indicate that the soil and groundwater adjacent to this SWMU are contaminated with chlorinated solvent. Based on the analytical data, significant releases from this unit probably occurred sometime during its operation.

4.7 SWMU 9: Sump - Inverted Oil/Water Separator

4.7.1 Information Summary

Unit Description: The sump, located directly east of the distillation facility, operate as a reversed or inverted oil/water separator. The unit was to capture any chlorinated solvents that might potentially spill from the distillation facility or the spent chlorinated solvent storage area. Internal dimensions are approximately 3.5 feet wide x 5.5 feet long x 5 feet deep. The 500 gallon separator was constructed of concrete with a steel separator plate.

This unit was engineered to capture heavy chlorinated solvents in the bottom of the tank, and then allow the overlying water to flow out the top of the unit to the storm sewer. The separator was pumped dry every 90 days and the liquid was collected in drums. The liquid was tested to determine if treatment was required prior to disposal. (E & E 1991).

Dates of Operation: The separator was installed in the early 1980's. and was utilized until 1986 when the concrete storage pad was taken out of service.

Wastes Managed: Spent chlorinated solvents.

Release Controls: The unit was constructed of concrete. There were no secondary containment features.

History of Releases: There is no history of leaks, spills or uncontrolled releases from the inverted oil/water separator unit (E & E 1991).

4.6.2 Conclusions

The inverted oil/water separator is presently intact although the unit ceased operation in 1986. It is unknown whether this SWMU has contributed to contamination in the underlying aquifer. Additional information is necessary to characterize this SWMU.

4.7 SWMU 10: Ozone Treatment System

4.7.1 Information Summary

Unit Description: The ozone treatment unit was a small scale pilot project which was intended to remove chemical contaminates from groundwater below the facility. The unit was located in the immediate vicinity of the distillation facility and consisted of an ozone generator with an oxygen concentrator, an 8 foot ozone perculation column, a 22,000 gallon temporary storage tank and associated hoses, circulating pumps, etc. The unit operated at a flow capacity of

approximately 3 gallons of water per minute. The treated groundwater water was tested and discharged to the sanitary sewer system with the City of Portland's approval (E & E 1991).

Dates of Operation: The ozone treatment system operated from August 1989 to June 1990 when it was returned to Canada for repairs and modifications.

Wastes Managed: Contaminated groundwater generated during well development operations, groundwater sampling events, and an aquifer test.

Release Control: Float switches automatically shut the unit down if the water flow exceeded operational parameters. Temporary berms of absorbent material were placed around the ozone generating unit and perculation column during operational periods.

History of Release: No leaks, spills or uncontrolled releases have been observed from this unit (E & E 1991).

4.7.2 Conclusions:

The ozone treatment system was utilized for nearly 1 year before it was returned to the manufacturer for repairs and modifications. It is unlikely that this unit has contributed to the site's groundwater and soil contamination.

4.8 AOC 1: Yard

4.8.1 Information Summary

Unit Description: The paved yard is defined as the uncovered area that extends beyond the main warehouse to the south. Chemical loading and unloading from rail cars and trucks occurs in this yard which is adjacent to the western loading dock. The south end of the yard is used to store clean 55-gallon steel and poly drums along with other company equipment (E & E 1991).

Dates of Operation: The area has been utilized since 1947.

Wastes Managed: Storm sewer interceptor is located in the area. Debris removed from this interceptor contained chlorinated solvents.

Release Controls: Storm sewer shutoff valves were installed in two phases beginning in November 1981 and completed in September 1982.

History of Release:

- On September 8, 1983, a spill of 515 gallons of trichloroethene occurred adjacent to the loading dock.

- On September 14, 1985, 2,746 pounds of methylene chloride and 1,032 pounds of toluene spilled adjacent to the loading dock.
- On June 24, 1988, 50 gallons of 15-s-9 surfactant was spilled on the ground. This was due to overfilling a tank truck.
- On June 6, 1990, 3,900 gallons of nitric acid leaked from a blend tank in the yard to the containment area (3 foot dike) surrounding the blend tank.

Soil samples collected on August 4, 1987 and groundwater samples collected on August 8, 1991 in the western yard suggest that elevated concentration of TCE, TCA and PCE exist in the underlying aquifer and on-site soils.

4.8.2 Conclusions

The yard is presently active and has been since 1947. Several spills have occurred in the western portion of the yard. No documented remediation took place following these spills. Samples results collected from the western yard indicate that elevated concentrations of TCE, TCA, PCE, exist in the groundwater and underlying soils. It is probable that this AOC is contributing to groundwater and soil contamination.

4.9 AOC 2: Storage Tanks Area #1

4.9.1 Information Summary

Unit Description: Storage tank area #1 consists of a cluster of tanks located along the south western border of the site (E & E 1991). A list of tank capacities, tank installation dates, and products stored in each tank is provided below:

# Tanks	Capacity	Year Installed	Products Stored
4	39,000	1984	Rubber Solvent, Isopropyl, Alcohol, Thinner 350B, Woodtreat RTU
4	27,000	1966	MIBK, Glycol Ether EB, Acetone, MEK
6	10,000	1987	Solvent 410, Hexane Propylene Glycol, Alcohol A200, Alcohol C190, Solvent 150

Dates of Operations: This area has been in use since 1966 and is currently active.

Waste Managed: No waste is managed at this tank farm.

Release Control: Each cluster of tanks is surrounded by a 3 foot high dike that has the capacity to hold one and one-half the capacity of the largest tank in the cluster. Each diked area has a concrete floor.

History of Release: On March 13, 1991, approximately 300 gallons of acetone were spilled as a result of overfilling a product tank. The spilled material was contained within the diked area. Reportedly other releases occurred in this unit, but in such small quantities that the size of the spill was not documented (E & E 1991).

4.9.2 Conclusions:

From 1984 to 1987, 14 tanks were installed in this AOC. It is not likely that releases from this area pose any continuing threat to human health or the environment.

4.10 AOC 3: Storage Tanks Area #2

4.10.1 Information Summary

Unit Description: Storage tank area #2 consists of a cluster of tanks located along the southwestern border of the site. A list of tank capacities, installation dates and products stored in each tank is provided below: (E & E 1991).

# Tanks	Capacity	Year Installed	Products Stored
6	12,000	1973	Glycol Ether PM, Solvent 450, Thinner 325, Solvent 7521, VM&P Naptha, Methanol
2	21,000	1976	MEK, Mineral Spirits
1	20,000	1976	Ethylene Glycol
1	25,000	1976	Toluene
1	25,000	1985	Xylene
1	12,000	1985	MEK refined

Dates of operation: This area has been in use since 1973 and is still currently active.

Wastes Managed: No waste is managed at this tank farm.

Release Control: Each cluster of tanks is surrounded by a 3 foot high dike that has the capacity to hold one and one-half the capacity of the largest tank in the cluster. Each diked area has concrete floor.

History of Release:

- On January 3, 1989, approximately 35 gallons of Toluene were spilled in this area. A portion of this spill (the exact quantity is unknown) entered the storm sewer.

- On August 6, 1987, VW&R's nitric acid tank was filled beyond capacity resulting in a 25 to 40 gallon spill into the containment area.

- On March 16, 1988, approximately 550 gallons of 1,1,1 trichloroethane (chlorothene SM) overflowed from the bulk tank into the containment area. Other releases have occurred in this unit, but in such small quantities the size of the spills were not documented (E & E 1991). Sample results indicate that elevated concentration of toluene exist in the underlying groundwater adjacent to the tank storage area (EPA 1991). No soil samples were collected surrounding this AOC.

4.10.2 Conclusions

Over a period of 13 years all the storage tanks in the tank farm #2 were installed with the first tank construction in 1973. Elevated concentrations of toluene have been found in underlying groundwater. It is possible that chemical releases at this AOC have attributed to groundwater contamination.

4.11 AOC 4: Laboratory

4.11.1 Information Summary

Unit Description: A laboratory is located in a room at the west end of the office. Laboratory functions include; quality control analyses of incoming and outgoing virgin chemical products, quality control checks on VW&R blends, fingerprinting of self-generated hazardous wastes, and analytical support to the sales department for new product formulation to meet customers needs in the metal finishing industry (E & E 1991).

Dates of Operation: Laboratory operations began in the early 1970's and are currently active.

Wastes Managed: Small quantities of flammable wastes, chlorinated compound wastes and freon wastes are generated in the laboratory. These wastes are segregated and accumulated in appropriately labeled containers. When full, the contents are transferred to 55 gallon drums of compatible wastestream types and then recycled or treated. VW&R representative stated that laboratory wastes are not disposed of off-site, but are reused in company products.

Release Control: None

History of Release: VW&R representative indicated that no spills or uncontrolled releases occurred in this area.

4.11.2 Conclusion

The laboratory was implemented the early 1970's, and remains in operation today. All wastes generated in the laboratory are reused in company products. It does not appear that this area has contributed to local groundwater contamination.

6.0 SUMMARY AND CONCLUSION

6.1 Summary

VW&R, located on Yeon Avenue in northern Portland Oregon, began operating in 1947 as a chemical distributor. In 1973, the company implemented a distillation facility to recycle spent chlorinated solvents. This operation continued until 1987.

As a chemical distributor VW&R packages, stores and transports large quantities of bulk chemicals. Most of the chemicals are transferred around site by way of hose lines. Occasionally these lines must be flushed with water in order to prevent cross contamination of chemical products. These rinsates are collected at a satellite accumulation area and are stored in 55-gallon drums prior to shipment off-site for disposal.

From 1973 to 1987, VW&R recycled spent chlorinated solvent to sell as reclaimed product. VW&R also recycled rinsates from returnable acid and caustic product drums.

In 1980, VW&R submitted a Part A application to the EPA for interim status for the treatment and storage of hazardous waste. Hazardous waste treatment-collection site license was issued to VW&R in 1981 for the treatment of PCE, TCE, TCA and methylene chloride.

Due to several on-site spills which have occurred over the past 10 years, VW&R contracted Harding Lawson Associates to conduct a corrective action plan and clean up any on-site contamination. From 1988 until present, 23 groundwater monitoring wells, four soil gas monitoring wells and one extraction well have been installed on-site. Sample results from these wells indicate the presence of TCE, TCA, DCE, PCE, xylene, toluene and methylene chloride in the groundwater and soil. Closure plans for the distillation facility and concrete storage area will be addressed during the RFI.

VW&R is situated in the Guild Lake area adjacent to the Willamette River. No domestic surface water intakes exist along the Willamette River or the Columbia River within 15 miles of the site. Approximately 80 domestic wells lie within 4 miles of the site. The majority of these wells are situated to the west and southwest of the site. The city of Portland supplies water to residences located across the Willamette, River to the east and south of VW&R. The closest domestic well is located approximately 1 mile from the site. The Willamette River, Columbia River and Multnomah Channel contain a total estimated wetland frontage of 30 miles. The Willamette River and Multnomah Channel

support an annual fish catch of approximately 316,000 pounds of Chinook Salmon and the Columbia River supports an annual fish catch of approximately 859,658 pounds of Chinook Salmon.

6.2 Conclusion

Sampling conducted on August 8, 1991, indicates contamination of the underlying shallow aquifer and on-site soils. These analytical results revealed elevated concentrations of TCE, TCA, PCE, methylene chloride, and toluene in both the groundwater and on-site soils.

Several spills have occurred on-site during chemical transfer and distribution at the facility. The SWMUs and AOCs associated with these spills are all located in the western portion of the facility. The western loading dock, the distillation facility, the concrete spent solvent storage area, the yard, and the storage tank area #2 are the SWMUs and AOC that potentially have attributed to the contamination of underlying aquifer and on-site soils.

The hazardous waste accumulation area, the ozone treatment system, the storage tank area #1, and the laboratory all appear not to have contributed to on-site contamination.

During the preliminary file review/background investigation and the visual site inspection it could not be determined whether the sanitary sump, the elementary neutralization unit, and the inverted oil/water separator have contributed to on-site contamination of groundwater and soils. Additional information is necessary to characterize these SWMUs.

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8/14/1991

FILE COPY

Appendix A

PHOTOGRAPHIC DOCUMENTATION

PHOTO IDENTIFICATION SHEET

'YPE OF CAMERA: CANON AE-1/3289855

TDD and PAN NOs.: F10-9101-011/FOR0050CAA

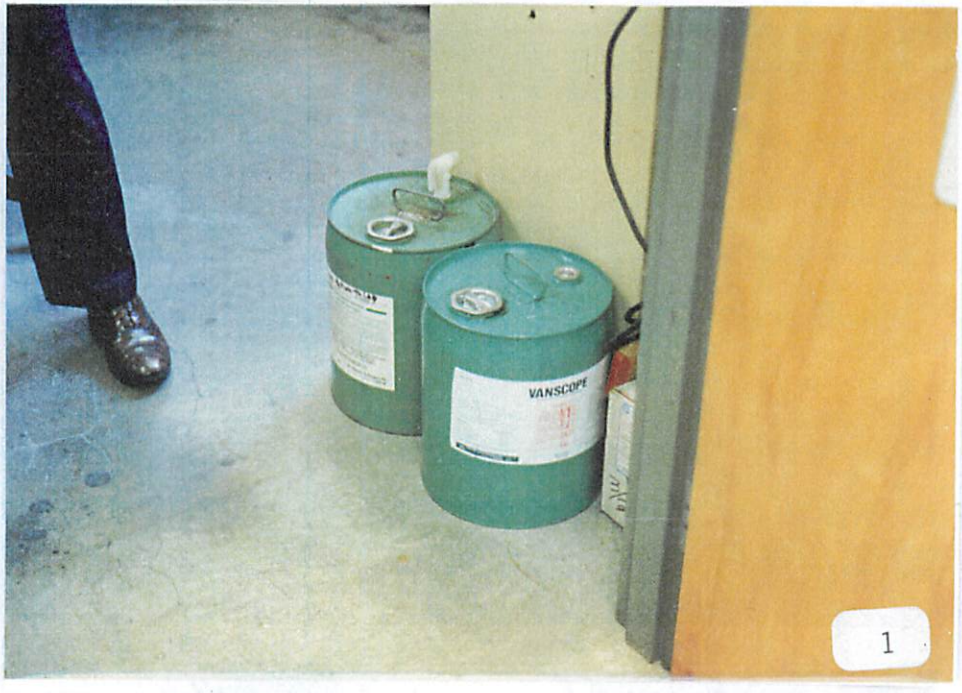
'YPE OF FILM: ED 135-20/KR 135-20

SITE NAME: Van Water & Rogers

Frame No.	Roll No.	Date	Time	Taken By	Witnessed By	Description of Photo
1	1	8/14/91	> >	David Zimmermann	Amy Houghton	Laboratory Accumulation waste point. Facing southwest.
2	1	8/14/91	> >	David Zimmermann	Amy Houghton	The western loading dock. Facing south.
3	1	8/14/91	> >	David Zimmermann	Amy Houghton	Concrete storage pad. Facing south.
4	1	8/14/91	> >	David Zimmermann	Amy Houghton	Distillation facility. Facing Northwest.
5	1	8/14/91	> >	David Zimmermann	Amy Houghton	Satellite accumulation area in distillation building. Facing southwest.
6	1	8/14/91	> >	David Zimmermann	Amy Houghton	Inverter oil/water separator. Facing East.
7	1	8/14/91	> >	David Zimmermann	Amy Houghton	Satellite accumulation area located in the western loading dock. Facing east.
8	1	8/14/91	> >	David Zimmermann	Amy Houghton	Neutralization unit tank #1. Facing south.
9	1	8/14/91	> >	David Zimmermann	Amy Houghton	Neutralization unit tanks 1 & 2. Facing west.
10	1	8/14/91	> >	David Zimmermann	Amy Houghton	Drum fill area adjacent to neutralization tank. Facing southwest.
11	1	8/14/91	> >	David Zimmermann	Amy Houghton	Current hazardous waste area. Facing northeast.
12	1	8/14/91	> >	David Zimmermann	Amy Houghton	Eastern loading dock. Facing north.
13	1	8/14/91	> >	David Zimmermann	Amy Houghton	Satellite Accumulation area in solvent drum fill area. Facing southwest.
14	1	8/14/91	> >	David Zimmermann	Amy Houghton	Storm sewer lines near drum fill area. Facing southwest.
15	1	8/14/91	> >	David Zimmermann	Amy Houghton	Drum storage area - Southern Portion of the yard. Facing north.
16	1	8/14/91	> >	David Zimmermann	Amy Houghton	Drum Storage area - Southern portion of the yard. Facing northwest.
17	1	8/14/91	> >	David Zimmermann	Amy Houghton	Satellite accumulation area for bulk storage portion of the yard. Facing North.
18	1	8/14/91	> >	David Zimmermann	Amy Houghton	Storage tank containment. Facing North.
19	1	8/14/91	> >	David Zimmermann	Amy Houghton	Warehouse - Drum product storage. Facing Southeast.

C-LINE #52584
35MM PRINTS

3



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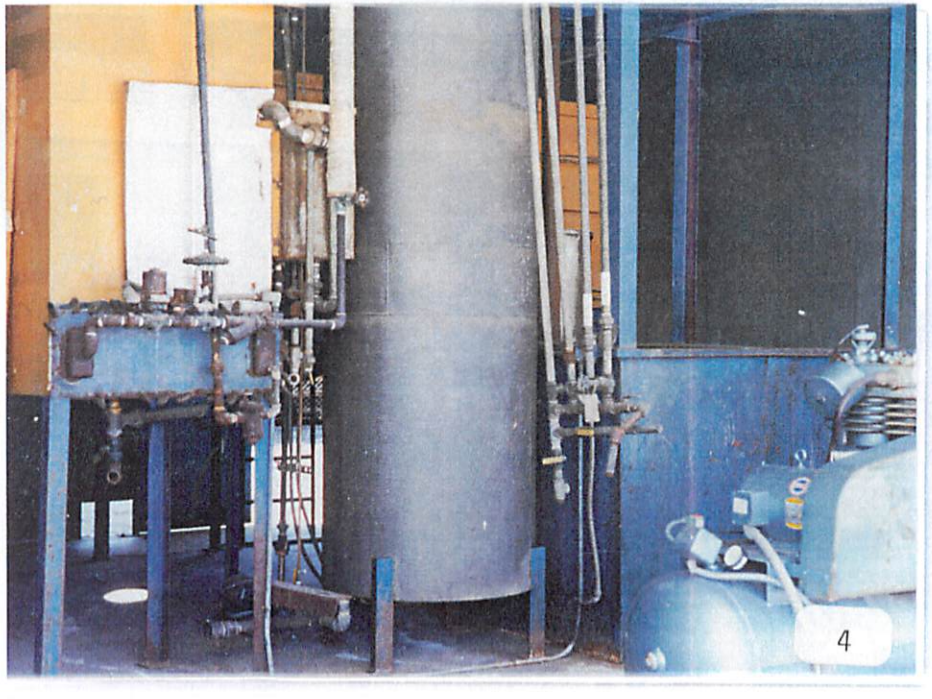
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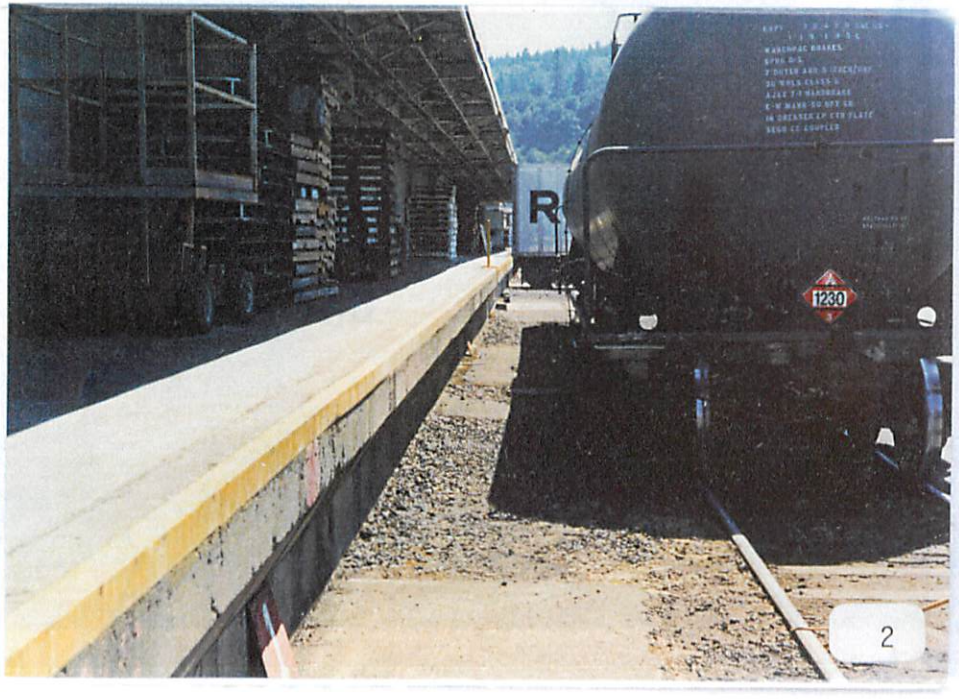


2


NOTICE
CHOCK NEAR
WHEELS

7

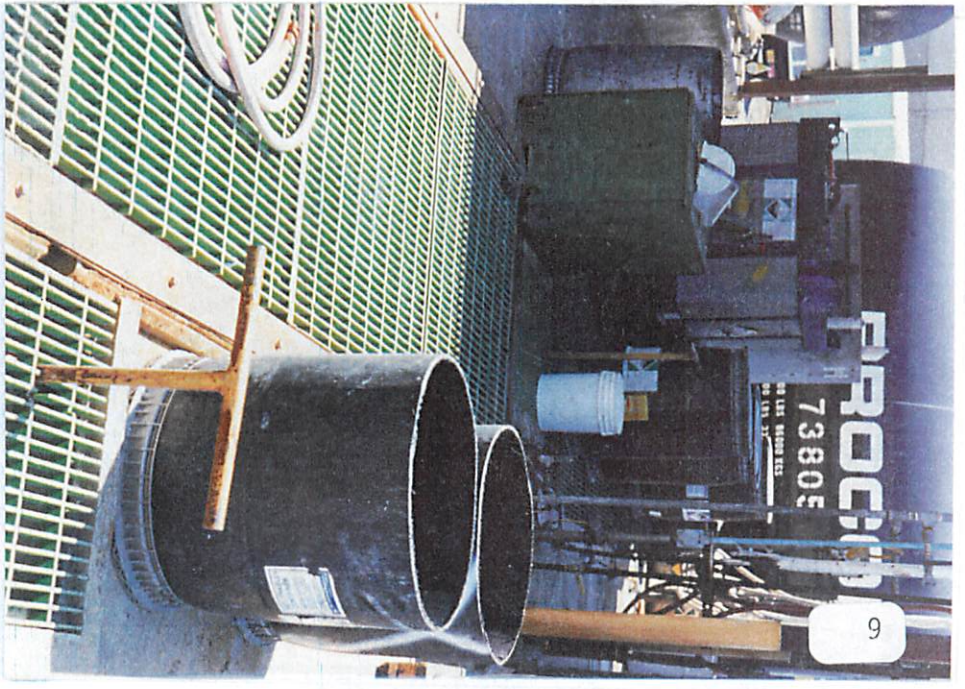

WASTE
SC 99
Salvage Drum
DOT-E9430
PROPERTY OF

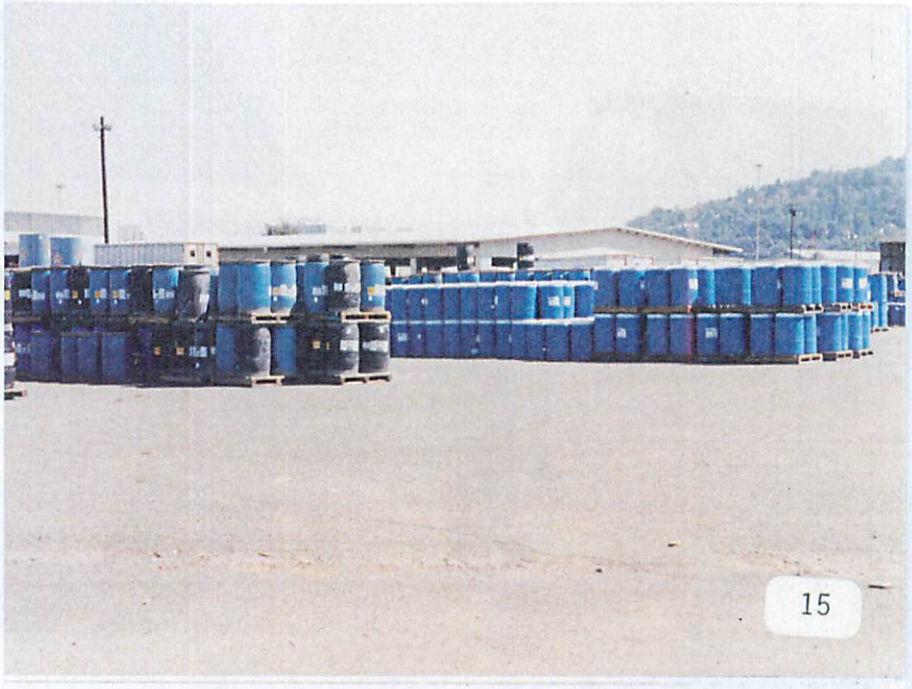
5

8

6

C-LINE #52584
35MM PRINTS

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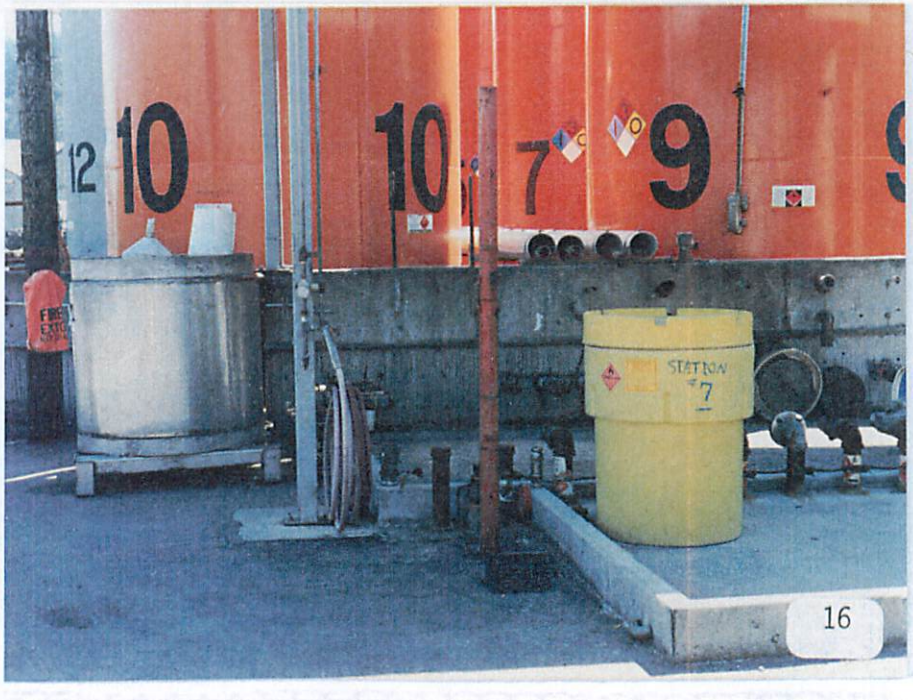
DANGER
CAUTION
HAZARDOUS WASTE
STORAGE AREA
UNAUTHORIZED PERSONS
KEEP OUT
13


12
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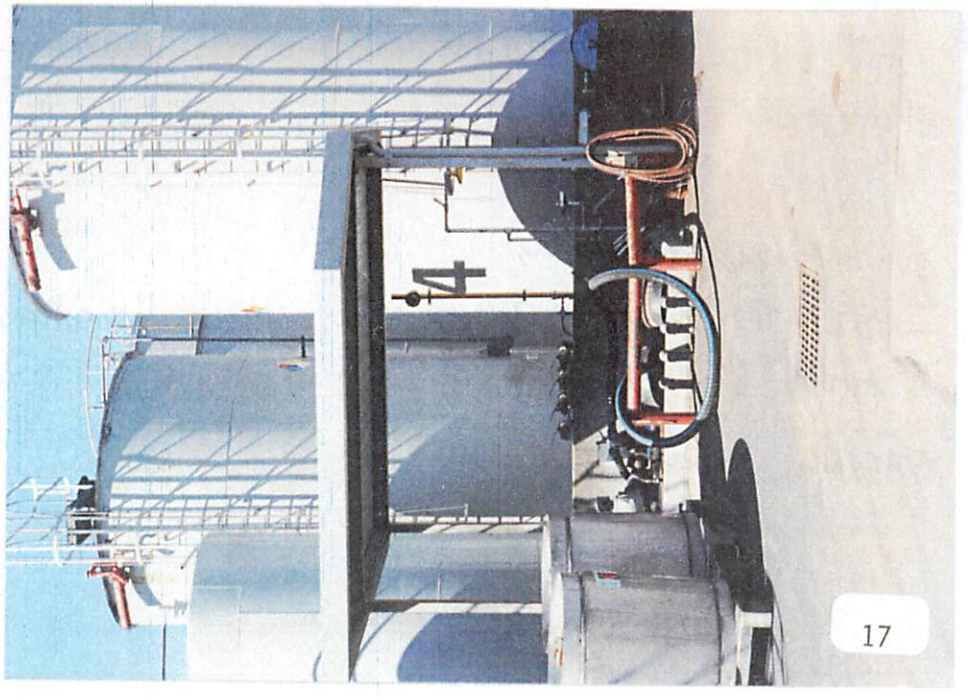
10
7
9
STATION
#7
16


14

C-LINE #52584
35MM PRINTS



~~#18~~ AH #17
VAN WATER & ROGERS
PORTLAND, OR.
8/14/91
DAVID ZIMMERMANN
SATTELITE ACCUM. AREA BY BULK STORAGE AREA (2)
FACING NORTH

#18
VAN WATER & ROGERS
PORTLAND, OR.
8/14/91
DAVID ZIMMERMANN
CONTAINMENT IN STORAGE TANK AREA
FACING NORTH

#19
VAN WATERS & ROGERS
PORTLAND, OR.
8/14/91
DAVID ZIMMERMANN
WAREHOUSE - DRY PRODUCT STORAGE
FACING SOUTH EAST